

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): ~~Target~~ A target intended to emit neutrons when it is bombarded with particles, ~~characterised in that it comprises~~ comprising:

neutron emissive parts  $[(11)]$  and neutron non-emissive parts  $[(12)]$  which are juxtaposed, only the neutron emissive parts emitting neutrons during the bombardment with particles, said emissive and non-emissive parts ~~forming~~ being arranged so as to form a pattern ~~of the type of that of~~ as a coded mask.

Claim 2 (Currently Amended): ~~Target~~ The target according to claim 1, ~~characterised in that~~ wherein the emissive parts  $[(11)]$  are formed from at least one metal hydride, the metal  $[(15)]$  of the metal hydride being deposited on a support  $[(14)]$  in non-hydrogen fixing material through a stencil  $[(16)]$ .

Claim 3 (Currently Amended): ~~Target~~ The target according to claim 1, ~~characterised in that it comprises~~ further comprising:

an extended neutron emissive zone  $[(18)]$  formed from at least one metal hydride, said extended zone  $[(18)]$  cooperating with a mask  $[(19)]$  in neutron non-emissive material, the non-emissive material of the mask  $[(19)]$  partially covering up the extended emissive zone vis-à-vis the particles and forming non-emissive parts  $[(12)]$ .

Claim 4 (Currently Amended): ~~Target~~ The target according to claim 3, ~~characterised in that~~ wherein the extended emissive zone  $[(18)]$  is supported by a support  $[(14)]$  in a non-hydrogen fixing material.

Claim 5 (Currently Amended): ~~Target~~ The target according to ~~one of claims 2 or 4,~~  
~~characterised in that~~ claim 2, wherein the non-hydrogen fixing material of the support  $[(14)]$   
is chosen from among copper, silver or gold, said metals being used alone or in combination.

Claim 6 (Currently Amended): ~~Target~~ The target according to claim 1, ~~characterised~~  
~~in that the metal of~~ wherein the metal hydride is chosen from ~~among~~ the group consisting of  
titanium hydride, zirconium hydride, erbium hydride, scandium hydride and vanadium  
hydride.

Claim 7 (Currently Amended): ~~Target~~ The target according to claim 3, ~~characterised~~  
~~in that~~ wherein the non-emissive material of the mask  $[(19)]$  is chosen from among  
molybdenum, steel, iron, copper, tungsten and tantalum, said metals being used alone or in  
combination.

Claim 8 (Currently Amended): ~~Particle~~ A particle accelerator, ~~characterised in that it~~  
~~comprises~~ comprising a target  $[(65)]$  according to claim 1.

Claim 9 (Currently Amended): Application of the particle accelerator according to  
claim 8 to radiography, in which the target  $[(10)]$  cooperates with the geometric  
deconvolution means  $[(32)]$  to decode an untreated image  $[(30)]$  given by the neutrons  
having crossed through an object  $[(4)]$  to be radiographed in a reconstructed image  $[(31)]$   
of the object.

Claim 10 (Currently Amended): ~~Partiele~~ The particle accelerator according to claim 8, ~~characterised in that it is~~ wherein the particle accelerator is equipped with an  $\alpha$  particle detector  $[(69)]$  associated with the emission of neutrons.

Claim 11 (Currently Amended): ~~Partiele~~ The particle accelerator according to claim 10, ~~characterised in that~~ wherein the  $\alpha$  particle detector  $[(69)]$  comprises a plurality of pixels  $[(76)]$  arranged in a matrix.

Claim 12 (Currently Amended): ~~Partiele~~ The particle accelerator according to claim 10, ~~characterised in that~~ wherein the target  $[(65)]$  is inclined in relation to the direction of the particles  $[(64)]$  that are bombarding it.

Claim 13 (Currently Amended): ~~Partiele~~ The particle accelerator according to claim 10, ~~characterised in that~~ wherein the target  $[(80)]$  is substantially parallel to the  $\alpha$  particle detector  $[(58)]$ .

Claim 14 (Currently Amended): Application of the particle accelerator according to claim 10 to the analysis of substances and/or the imaging of substances that may be hidden, said accelerator cooperating with at least one  $\gamma$  radiation detector  $[(50)]$  and geometric deconvolution means  $[(81)]$  for a gamma pseudo-image obtained by coincidence of gamma events and  $\alpha$  particles detected by the  $\alpha$  particle detector.

Claim 15 (Original): Application of the particle accelerator according to claim 10 to the imaging of substances that may be hidden, the tube cooperating with a neutron detector.

Claim 16 (Currently Amended): ~~Neutron~~ A neutron generating tube, ~~characterised in that it comprises~~ comprising a target  $[(10)]$  according to claim 1.

Claim 17 (Currently Amended): Application of the neutron generating tube according to claim 16 to radiography, in which the target  $[(10)]$  cooperates with the geometric deconvolution means  $[(32)]$  for decoding an untreated image  $[(30)]$  given by the neutrons having crossed through an object  $[(4)]$  to be radiographed in a reconstructed image  $[(31)]$  of the object.

Claim 18 (Currently Amended): ~~Neutron~~ The neutron generating tube according to claim 16, ~~characterised in that it~~ wherein the neutron generating tube is equipped with an  $\alpha$  particle detector  $[(49)]$  associated with the emission of neutrons.

Claim 19 (Currently Amended): ~~Neutron~~ The neutron generating tube according to claim 18, ~~characterised in that~~ wherein the  $\alpha$  particle detector  $[(49)]$  comprises a plurality of pixels  $[(76)]$  arranged in a matrix.

Claim 20 (Currently Amended): ~~Neutron~~ The neutron generating tube according to claim 18, ~~characterised in that~~ wherein the target  $[(47)]$  is inclined in relation to the direction of the particles  $[(64)]$  that are bombarding it.

Claim 21 (Currently Amended): ~~Neutron~~ The neutron generating tube according to claim 18, ~~characterised in that~~ wherein the target  $[(80)]$  is substantially parallel to the  $\alpha$  particle detector  $[(58)]$ .

Claim 22 (Currently Amended): Application of the neutron generating tube according to claim 18 to the analysis of substances and/or the imaging of substances that may be hidden, the tube cooperating with at least one  $\gamma$  radiation detector [(50)] and geometric deconvolution means [(81)] for a gamma pseudo-image obtained by coincidence of gamma events and  $\alpha$  particles detected by the  $\alpha$  particle detector.

Claim 23 (Original): Application of the neutron generating tube according to claim 18 to the imaging of substances that may be hidden, the tube cooperating with a neutron detector.